Scientific Inquiry

2-1 The student will demonstrate an understanding of scientific inquiry, including the processes, skills, and mathematical thinking necessary to conduct a simple scientific investigation.

2.1.3 **Represent and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language.**
Taxonomy Level: 2.1-B Understand Conceptual Knowledge

Previous/Future knowledge: In kindergarten students gave explanations based on observations made or previous experiences. This is the first time students will represent or communicate simple data in drawings, tables, and graphs, and give explanations based on the represented data. In 3rd grade (3-1.6), students will infer meaning from data communicated in graphs, tables, and diagrams. In 4th grade (4-1.6), students will construct and interpret diagrams, tables, and graphs made from recorded measurements and observations. In 5th grade, students will communicate the results of a simple technological design by using descriptions, models, and drawings (5-1.7) and communicate the findings of an evaluation in oral or written form (5-1.8).

It is essential for students to know that the data collected in simple scientific investigations should be organized in a way that represents and communicates simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language. All drawings, tables, pictographs, and bar graphs need to be clearly labeled.

- *Drawings* may be pictures or diagrams used to represent an observation.
- *Tables* organize and represent information collected or presented.

NOTE TO TEACHER: Tables are made of columns and rows. Categories are listed in the first (left) column and data collected are listed in columns to the right of the category column.

- *Pictographs* use pictures or symbols to represent numerical data.
- *Bar graphs* show numerical data for a specific category (such as animals in the zoo or the amount of rainfall in different seasons).

NOTE TO TEACHER: The numbers are represented by the lengths of the bars. The members of the category are labeled on the side-to-side line at the bottom of the graph (horizontal axis); the numbers are marked on the up-and-down line (vertical axis).

- *Oral and written language* can be used to describe observations, share data, or explain results.

It is not essential for students to draw line or pie/circle graphs.

Assessment Guidelines:
The objective of this indicator is to *represent* and communicate simple data and explanations through drawings, tables, pictographs, bar graphs, and oral and written language; therefore, the primary focus of assessment should be to show and describe observations or data using forms listed in the indicator. However, appropriate assessments should also require students to *recall* how drawings, tables, pictographs, and bar graphs should be labeled.